

AGA Graphics Supplement

Your Amiga is built around the AGA (AA) custom chipset, which supersedes the earlier ECS and original chipsets in graphics capability.

The new graphics features of the AGA chipset and Release 3 software open up many new possibilities. Because of the numerous options involved, it can sometimes be difficult to find the optimum graphics configuration for the software and monitor you are using. This Supplement pulls all the information on using the AGA/Release 3 display modes together into one place, and adds further suggestions on how to determine monitor compatibility.

The following areas are covered:

- General AGA graphics features, and how they differ from previous Amigas
- Display modes and monitor drivers
- Mode Promotion
- Coercion
- Preferences editor location

Mode Promotion

Mode Promotion is a feature of AGA Amigas intended to give you the best possible display. When an application tries to open a normal NTSC or PAL (15 kHz) screen while Mode Promotion is enabled, the screen is promoted to a solid, non-flickering 27 kHz display.

A non-interlaced screen (200/256 pixel high) is scan-doubled, which fills in the blank scan lines; an interlaced screen (400/512 pixels high) is de-interlaced so that horizontal lines do not flicker. This is similar to the operation of the Commodore Display Enhancer circuitry in the Amiga 3000. By default, Mode Promotion is off.

Not all display modes can be promoted. Only standard NTSC and PAL screens are promoted. (Super-HighRes modes are promoted by changing them to autoscrolling Dbl HighRes screens.) Certain screens are not promoted if the program that opens the screen does not allow it. Video applications in particular may force a standard NTSC/PAL screen. Also, games and other applications that bypass the operating system are not promoted.

Note The horizontal overscan available when using the DblNTSC and DblPAL monitors is slightly less than that of the equivalent non-promoted screen.

Enabling Mode Promotion

To enable promotion, make sure the Mode Promotion gadget in the IControl Preferences editor is checked, and that you select Use or Save to exit the editor. Also, the DblNTSC or DblPAL monitor driver must be in your DEVS:Monitors drawer and be activated. If you did not boot with a given monitor in DEVS:Monitors and want to activate it, double-click on its icon after dragging it into DEVS:Monitors.

Tips for Working with AGA

To get the most from your AGA Amiga, observe these recommendations:

- **Use a multiscan monitor that can sync down to 15 kHz if possible.** A monitor that can display 15 kHz modes is required for initial setup of the Amiga.
- **To enable Mode Promotion, select the Mode Promotion gadget in the IControl Preferences editor.** Be sure the appropriate monitor driver (DblNTSC for NTSC Amigas, or DblPAL for PAL Amigas) is in the DEVS:Monitors drawer.
- **Place in DEVS:Monitors only the monitor drivers for the display modes you need.** This reduces clutter in the ScreenMode Preferences editor.
- **Mode Promotion should be turned off when doing video work.** Video devices require 15 kHz output.
- **In case of software compatibility problems, the Amiga Early Startup Control options may help.** If an application appears not to work on an AGA/Release 3 Amiga, try first booting the system with the Enhanced or Original custom chip set emulation available from the Display Options screen.

Monitor Types

The Amiga requires an analog RGB (colour) monitor. There are three general types of analog RGB monitors that you might use with your Amiga. The difference among them is in the horizontal sync frequencies (also called the scan rates) they accept:

1. Video monitors, like the Commodore 1084 series, accept only the standard Amiga 15 kHz scan rate (NTSC and PAL display modes)
2. VGA-only monitors accept only the 31 kHz VGA scan rate (Dbl, Multiscan, and Productivity modes)

Video Monitors

Monitor Driver	Horizontal Scan Rate	Vertical Scan Rate
NTSC	15.72 kHz	60 Hz
PAL	15.60 kHz	50 Hz
Euro36	15.76 kHz	73 Hz

VGA Monitors

The standard VGA horizontal scan rate is 31.5 kHz. Most, but not all, VGA-only monitors can also display the 27 kHz promoted modes produced by the DbINTSC and DbIPAL monitor drivers.

Note If you are attempting to use a VGA monitor with the DbI or Multiscan modes, and it does not display those modes correctly, activating the VGAOnly monitor driver may help. It modifies the scan rates slightly, at the cost of smooth horizontal scrolling. (There is no other reason to use VGAOnly.) The next tables show the normal scan rate followed by the rates as modified by VGAOnly.

Monitor Driver	Horizontal Scan Rates	Vertical Scan Rates
DbINTSC	27.66 kHz / 29.20 kHz	58 Hz / 59 Hz
DbIPAL	27.50 kHz / 29.45 kHz	48 Hz / 50 Hz
Euro72	29.32 kHz / 31.43 kHz	69 Hz / 70 Hz
Multiscan	29.29 kHz / 31.44 kHz	58 Hz / 60 Hz

(If you activate or deactivate VGAOnly, you should delete the file ENVARC:Sys/overscan.prefs and reboot before editing your ScreenMode and Overscan preferences settings.)

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